IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF FOR THE APPELLANT

Ex parte PHAN-ANH

RECOVERY TECHNIQUES IN MOBILE NETWORKS

Serial No. 09/802,861
Appeal No.:
Group Art Unit: 2617

Enclosed is a check in the amount of Two Thousand Ninety Dollars ($2,090.00) to cover the official fee for this Appeal Brief, and the extension fees. In the event that there may be any fees due with respect to the filing of this paper, please charge Deposit Account No. 50-2222.

Majid S. AlBassam
Attorney for Appellant(s)
Reg. No. 54,749

SQUIRE, SANDERS & DEMPSEY LLP
8000 Towers Crescent Drive, 14th Floor
Tysons Corner, VA 22182-2700

Atty. Docket: 59864.00535

MSA/jf

Encls: Check No. 14304
Appeal Brief (in triplicate)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Appellant:

PHAN-ANH et al. Appeal No.:

Serial Number: 09/802,861 Group Art Unit: 2617

Filed: March 12, 2001 Examiner: Nghi H. LY

For: RECOVERY TECHNIQUES IN MOBILE NETWORKS

BRIEF ON APPEAL

April 6, 2006

I. INTRODUCTION

This is an appeal from the final rejection set forth in an Official Action dated April 6, 2005, finally rejecting claims 1-28, all of the claims pending in this application. Claims 15, 19, 21, and 25 stand rejected under 35 U.S.C. §102(e) as being anticipated by "3GPP" (3G TR 23.821 V1.0.1 Release 2000-07). Claims 1, 2, 5, 8, 9, and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bharatia (U.S. Pub. No. 2001/0031635) in view of Foti (U.S. Patent No. 6,654,606). Claims 3, 4, 6, 7, 10, 11, 13, and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bharatia in view of Foti and further in view of Taguchi (U.S. Patent No. 6,163,532). Claims 16, 22, and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Sanchez-Herrero (U.S. Pub. No. 2002/0147845). Claims 17, 20, 23, and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Bergenwall (U.S. Patent No. 6,721,291). A Notice of Appeal was timely filed on October 6, 2005 with an appropriate petition for Extension of Time. This Appeal Brief is being

timely filed.

II. REAL PARTY IN INTEREST

The real parties in interest in this application is Nokia Corporation, of Espoo, Finland, by virtue of an Assignment which was submitted for recordation on September 25, 2001, and which was recorded at Reel 012194, Frame 0786, on September 25, 2001.

III. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences which will directly effect or be directly effected by or have a bearing on the Board's decision in this appeal.

IV. STATUS OF CLAIMS

Claims 1-28, all of the claims pending in the present application, are rejected as being unpatentable over certain prior art. Specifically, the rejections of claims 15, 19, 21, and 25 under 35 U.S.C. §102(e) as being anticipated by "3GPP" (3G TR 23.821 V1.0.1 Release 2000-07), claims 1, 2, 5, 8, 9, and 12 under 35 U.S.C. §103(a) as being unpatentable over Bharatia (U.S. Pub. No. 2001/0031635) in view of Foti (U.S. Patent No. 6,654,606), claims 3, 4, 6, 7, 10, 11, 13, and 14 under 35 U.S.C. §103(a) as being unpatentable over Bharatia in view of Foti and further in view of Taguchi (U.S. Patent No. 6,163,532), claims 16, 22, and 26 under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Sanchez-Herrero (U.S. Pub. No. 2002/0147845), and claims 17, 20, 23, and 27 under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Bergenwall (U.S. Patent No. 6,721,291) are the subject of this appeal.

V. STATUS OF AMENDMENTS

Claims 1, 5, 8, 12, 15, 19, 21, and 25 were amended in an Amendment that was filed on October 21, 2004, and which was entered. Claims 1-28 are pending.

VI. SUMMARY OF THE INVENTION

Embodiments of the invention provide a method, and associated system, for recovering location information of a subscriber in a mobile network. The method for recovering location information of a subscriber in a mobile network may include forwarding a registration request from the subscriber to an S-CSCF including the subscriber's TA, then forwarding an AL (Application Level) location update from the S-CSCF to an HSS including the subscriber's TA and the S-CSCF address, and storing data including the subscriber's TA and the S-CSCF address in the HSS so as to be protected against loss. Specification, page 2, lines 4-11.

According to other embodiments of the invention, a method for recovering location information of a subscriber in a mobile network includes forwarding a registration request from the subscriber to an S-CSCF including the subscriber's TA and then forwarding an AL location update from the S-CSCF to an HSS including the S-CSCF address. The method may further include storing data including the subscriber's TA in a non-volatile memory in the S-CSCF so as to be protected against loss. Specification, page 2, lines 12-19.

Other embodiments of the invention include providing a method for recovering location information of a subscriber in a mobile network which includes, upon an S-CSCF

receiving a call setup request for the subscriber from an I-CSCF, forwarding a route request to a UMS and receiving a home address of the subscriber. The method further includes forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber and then forwarding the call setup request from the home agent to the subscriber and subsequently forwarding an address update from the subscriber to the S-CSCF. Specification, page 2, lines 20-29.

VII. ISSUES

The issues on appeal are whether the rejections of claims 1-28 discussed above are in error. As will be discussed below, this Appeal Brief will show that these rejections should be withdrawn, and this application passed to issue.

VIII. GROUPING OF CLAIMS

Applicants respectfully submit that each of claims 1-28 stands alone. In other words, each of the presently pending claims is separately patentable.

IX. APPELLANT'S ARGUMENTS

Applicants respectfully submit that each of pending claims 1-28 recites subject matter which is neither disclosed nor suggested by the cited prior art.

The Office Action stated that claims 15, 19, 21, and 25 were rejected under 35 U.S.C. §102(e) as being anticipated by "3GPP" (3G TR 23.821 V1.0.1 Release 2000-07). The rejection is traversed as being based on a reference that neither teaches nor suggests all of the features clearly recited in independent claims 15, 19, 21, and 25.

Claim 15, upon which claims 16-18 are dependent, recites a method of recovering

location information of a subscriber in a mobile network. The method includes, upon a Serving-Call State Control Function (S-CSCF) receiving a call setup request for the subscriber from an Interrogating-Call State Control Function (I-CSCF), the S-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address from the UMS. The method further includes forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber, forwarding the call setup request from the home agent to the subscriber, and forwarding an address update from the subscriber to the S-CSCF.

Claim 19, upon which claim 20 is dependent, recites a method of recovering location information of a subscriber in a mobile network. The method includes, upon an Interrogating-Call State Control Function (I-CSCF) receiving a call setup request for the subscriber, the I-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS. The method further includes forwarding the call setup request from the I-CSCF to a home agent at the home address of the subscriber, forwarding the call setup request from the home agent to the subscriber, and forwarding an address update from the subscriber to the I-CSCF.

Claim 21, upon which claims 22-24 are dependent, recites a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network. The method includes, upon a Serving-Call State Control Function (S-CSCF) receiving a call setup request for the subscriber from an Interrogating-Call State Control Function (I-CSCF), the S-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS. The

method further includes forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber, forwarding the call setup request from the home agent to the subscriber, and forwarding an address update from the subscriber to the S-CSCF.

Claim 25, upon which claims 26-28 are dependent, recites a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network. The method includes, upon an Interrogating-Call State Control Function (I-CSCF) receiving a call setup request for the subscriber, the I-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS. The method further includes forwarding the call setup request from the I-CSCF to a home agent at the home address of the subscriber, forwarding the call setup request from the home agent to the subscriber, and forwarding an address update from the subscriber to the I-CSCF.

It is respectfully submitted that the cited prior art fails to disclose or suggest the subject matter of the presently pending claims, and that the prior art therefore fails to provide the features provided by the present invention.

3GPP discloses flexible and scalable mechanisms to support global roaming and interoperability with external networks such as PLMN, 2G Legacy networks, PDNs and other multimedia VoIP networks. The Office Action relies upon Figure B.3 on page 53 of the 3GPP document as allegedly disclosing the elements of claims 15, 19, 21, and 25.

As outlined in MPEP §2131, in order for a reference to anticipate a claim, the reference must teach every element of the claim. A claim is only anticipated if each and

every element of the claim is described, either inherently or expressly, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628 (Fed. Cir. 1987).

Applicants respectfully submit that the Office Action has failed to establish a prima facie case for anticipation since 3GPP fails to disclose or suggest all of the elements of claims 15, 19, 21, and 25. For example, 3GPP does not disclose or suggest the step of forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber, as recited in claims 15, 19, 21, and 25. The Office Action alleges that step V8 in Figure B.3 of 3GPP discloses forwarding the call setup request to a home agent at the home address of the subscriber. Step V8 is an "OK 200" communication between the S-CSCF and the vInterrogating-CSCF. Specifically, step V8 of Figure B.3 only discloses forwarding the Serving CSCF name from the Serving CSCF to the vI-CSCF. The description of step V8 on page 55 of 3GPP does not describe anything pertinent to a home agent. There is no mention of forwarding the call setup request from the Serving CSCF to a home agent at the home address of the subscriber. Since the only two entities involved in step V8 are CSCF functions, the claimed home agent at the home address of the subscriber is not disclosed by 3GPP. As such, 3GPP does not appear to disclose or suggest at least this element of claims 15, 19, 21, and 25.

Furthermore, each of claims 15, 19, 21, and 25 recite, in part, that either the S-CSCF or the I-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address from the UMS. 3GPP fails to disclose or suggest this limitation of the claims. The Office Action cites Fig. B.3 on page 53 of 3GPP as allegedly disclosing this element of the claims. It appears that the Office Action has construed step V6 between the S-CSCF and the hHSS as meeting the claim limitations involving the UMS.

However, Fig. B.3 does not disclose a UMS. In fact, step V6 is described on page 54 as a Cs-pull from the serving CSCF to the hHSS. Therefore, 3GPP does not disclose or suggest forwarding a route request to a UMS and receiving a home address from the UMS.

For at least the reasons discussed above, Applicants respectfully submit that the Office Action has failed to establish a prima facie case for anticipation with respect to claims 15, 19, 21, and 25. Accordingly, Applicants respectfully request that the rejection of claims 15, 19, 21, and 25 be withdrawn and these claims allowed.

The Office Action rejected claims 1, 2, 5, 8, 9, and 12 under 35 U.S.C. §103(a) as being unpatentable over Bharatia (U.S. Pub. No. 2001/0031635) in view of Foti (U.S. Patent No. 6,654,606). The Office Action took the position that Bharatia discloses all of the elements of the claims, with the exception of storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network. The Office Action then relies upon Foti as allegedly curing this deficiency in Bharatia. Applicants respectfully submit that claims recite subject matter that is neither disclosed nor suggested by the cited prior art.

Claim 1, upon which claims 2-4 are dependent, recites a method of recovering location information of a subscriber in a mobile network. The method includes forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber. The method further includes forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server

(HSS) including the subscriber's TA and an address of the S-CSCF, and storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network.

Claim 5, upon which claims 6-7 are dependent, recites a method of recovering location information of a subscriber in a mobile network. The method includes forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA); which is a current Care of Address of the subscriber. The method further includes forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's TA, and storing data regarding the location update including the subscriber's TA in the S-CSCF so as to be protected against loss of the location information of the subscriber in the mobile network.

Claim 8, upon which claims 9-11 are dependent, recites a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network. The method includes forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber. The method further includes forwarding a location update of the subscriber in the mobile network from the S-CSCF to an Home Subscription Server (HSS) including the subscriber's TA and an address of the S-CSCF, and storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network.

Claim 12 recites a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network. The method includes forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber. The method further includes forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's TA, and storing data regarding the location update including the subscriber's TA in the S-CSCF so as to be protected against loss of the location information of the subscriber in the mobile network.

As will be discussed below, the cited prior art fails to disclose or suggest the subject matter of the presently pending claims and, therefore, fails to provide the features provided by the present invention.

Bharatia discloses a method of operation of a mobile terminal having a subscription in a packet switched (3G) wireless network within a legacy (2G) wireless network. When the 3G mobile terminal roams into the service area of the legacy network, the mobile terminal sends an attach request to a support node of the legacy wireless network which then authenticates the mobile terminal. The support node of the legacy wireless network interacts with the packet switched wireless network to receive the mobile terminal's subscriber data. The home subscriber service function of the packet switched wireless network then interacts with a prior support node to cancel the wireless terminals prior location. The support node of the legacy wireless network requests a visitor location register of the legacy wireless network to register the mobile terminal. The

visitor location register of the legacy wireless network then interacts with the packet switched wireless network to register the mobile terminal within the legacy wireless network. The visitor location register of the legacy wireless network acknowledges to the support node that the mobile terminal has been registered within the legacy wireless network. The support node of the legacy wireless network acknowledges the attach request to the mobile terminal.

Foti discloses a Call State Control Function (CSCF) and method of processing a call to a called mobile station (MS). The method is performed in the CSCFs in a third generation Internet Protocol (3G.IP) network. When an incoming call setup message such as a Fast Setup or Location Request message is received in the CSCF, the CSCF first determines via a relationship function, whether the CSCF is the Home CSCF for the called MS. If so, a first set of call processing steps are performed. If the CSCF is not the Home CSCF, the CSCF determines if it is currently serving the called MS. If the CSCF is the Serving CSCF, a second set of call processing steps are performed. If the CSCF is neither the Home CSCF nor the Serving CSCF for the called MS, a third set of call processing steps are performed.

In rejecting claims under 35 USC §103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. In re Fine, 837 F.2d 1071,1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In doing so, the PTO is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reasons must stem from some

teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S.825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F2d. 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the PTO are an essential part of complying with the burden of presenting a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Further, to establish prima facie obviousness of a claimed invention, all the claimed limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

If the PTO fails to meet this burden, the Applicant is entitled to a patent. In re Glaug, 62 USPQ2d 1151 (Fed. Cir. 2002). In the present case, discussed in detail below, Applicants respectfully submit the PTO has failed to meet this burden.

Bharatia and Foti, whether viewed singly or combined, do not disclose or suggest forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's Transport Address (TA), as recited in present claims 1, 5, 8, and 12. The Office Action cites Bharatia as allegedly disclosing this element of the claims. Bharatia merely discloses that the CSCF provides address handling functions including performing analysis, translation, modification,

address portability, and mapping of alias addresses (Bharatia, Paragraph 0079). In addition, Bharatia discloses that the HSS is responsible for storing and managing subscriber identification, numbering and addressing information, user security information, user location information, and the subscriber profile (Bharatia, Paragraph 0081). Bharatia fails to disclose or suggest that a location update of the subscriber is forwarded from the S-CSCF to a HSS including the subscriber's TA, as recited in the present claims. Furthermore, the Office Action states that Bharatia inherently discloses storing information so as to be protected by loss, but provides no rationale for such an inherent disclosure. Therefore, Applicants respectfully submit that the rejection of claims 1, 5, 8, and 12 is improper and without basis.

For at least the reasons discussed above, the cited references fail to disclose or suggest all of the elements of claims 1, 5, 8, and 12. As such, Applicants respectfully request that the rejection of claims 1, 5, 8, and 12 be withdrawn.

Claims 2 and 9 are dependent upon claims 1 and 8, respectively. Claim 2 recites, in part, that "upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in the HSS." Claim 9 recites, in part, that "upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in the HSS." It is respectfully submitted that claims 2 and 9 recite subject matter which is neither disclosed nor suggested by the combination of Bharatia and Foti. As such, Applicants respectfully request that the rejection of claims 2 and 9 be withdrawn and these claims allowed.

Claims 3, 4, 6, 7, 10, 11, 13, and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bharatia in view of Foti and further in view of Taguchi (U.S. Patent No. 6,163,532). The Office Action took the position that Bharatia and Foti disclose all of the elements of the claims, with the exception of storing data in non-volatile memory. The Office Action then relies upon Taguchi as allegedly curing this deficiency. Applicants respectfully assert that claims 3, 4, 6, 7, 10, 11, 13, and 14 recite subject matter which is neither disclosed nor suggested by the combination of Bharatia, Foti, and Taguchi.

Bharatia and Foti are discussed above. Taguchi discloses a method of packet data transmission in a mobile radio data communication system, in which packet data can be transmitted from a LAN side to a given data communication terminal device on a personal station side. When transmitting packet data to the mobile data terminal equipment, the LAN side data terminal equipment transmits packet data including a packet address of the mobile data terminal equipment to the LAN. If the packet address included in the packet data received through the LAN is the packet address of the mobile data terminal equipment, the control unit reserves the packet data and requests the exchange to connect to the packet address. When a connection is requested to the packet address, the exchange establishes a communication path for the control unit and transmits a signal including the packet address to the personal station through the wireless connection equipment. If the packet address included in the signal is a packet address corresponding to the mobile data terminal equipment, then the personal station transmits an acknowledgment signal. The exchange acknowledges the connection to the

packet address to the control unit, and the control unit transmits the reserved packet data to the mobile data terminal equipment.

Claims 3, 4, 6, 7, 10, 11, 13 and 14 are dependent upon claims 1, 5, and 8, respectively. Claim 3 recites, in part, "wherein storing data in the HSS comprises storing data in a non-volatile memory in the HSS." Claim 4 recites, in part, "wherein storing data in a non-volatile memory in the HSS comprises storing data in a hard disk drive." Claim 6 recites, in part, "wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in a non-volatile memory in the S-CSCF." Claim 7 recites, in part, "wherein storing data in a non-volatile memory in the S-CSCF comprises storing data in a hard disk drive." Claim 10 recites, in part, "wherein storing data in the HSS comprises storing data in a non-volatile memory in the HSS." Claim 11 recites, in part, "wherein storing data in a non-volatile memory in the HSS comprises storing data in a hard disk drive." Claim 13 recites, in part, "wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in a non-volatile memory in the S-CSCF." Claim 14 recites, in part, "wherein storing data in a non-volatile memory in the S-CSCF comprises storing data in a hard disk drive."

It is respectfully submitted that each of claims 3, 4, 6, 7, 10, 11, 13 and 14 recite subject matter which is neither disclosed nor suggested by the combination of Bharatia, Foti, and Taguchi. As such, Applicants respectfully request that the rejection of claims 3, 4, 6, 7, 10, 11, 13 and 14 be withdrawn and these claims allowed.

Claims 16, 22, and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Sanchez-Herrero (U.S. Pub. No. 2002/0147845). The Office Action took the position that 3GPP discloses all of the elements of the claims, with the exception of forwarding an indication to the UMS that the S-CSCF fails to have a Care of Address of the subscriber. The Office Action then relies upon Sanchez-Herrero as allegedly curing this deficiency in 3GPP. Applicants respectfully submit that the combination of 3GPP and Sanchez-Herrero fails to disclose or suggest all of the elements of claims 16, 22, and 26.

3GPP is discussed above. Sanchez-Herrero discloses a User Distribution Server (UDS) in a network having multiple servers and users which are each identified by a plurality of different user identifications. The UDS is located close to an entity disposed to request user information and the UDS responds to a query pertaining to a specific user by redirecting the query to the appropriate server or serving entity. The UDS implements a secondary database with user and server identification information obtained from primary user databases associated with or derived from the servers. The use of distinct primary and secondary databases simplifies data handling, since data changes and updates can be readily managed in the primary databases and then transferred to or actualized in the secondary database.

Claims 16, 22, and 26 are dependent upon claims 15, 21, and 25, respectively. Claim 16 recites, in part, "wherein forwarding the request to the UMS comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber." Claim 22 recites, in part, "wherein forwarding the request to the UMS

comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber." Claim 26 recites, in part, "wherein forwarding the request to the UMS comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber."

It is respectfully submitted that each of claims 16, 22, and 26 recite subject matter which is neither disclosed nor suggested by the combination of 3GPP and Sanchez-Herrero. Therefore, it is respectfully requested that the rejection of claims 16, 22, and 26 be withdrawn and these claims allowed.

Claims 17, 20, 23, and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over 3GPP in view of Bergenwall (U.S. Patent No. 6,721,291). The Office Action took the position that 3GPP discloses all of the elements of the claims, with the exception of forwarding the call setup request from the home agent to the subscriber comprises forwarding the call set up request to a Care of Address of the subscriber. The Office Action then relies upon Bergenwall as allegedly curing this deficiency in 3GPP. Applicants respectfully submit that claims 17, 20, 23, and 27 recite subject matter which is neither disclosed nor suggested by the combination of 3GPP and Bergenwall.

3GPP is discussed above. Bergenwall discloses a method and system for anycast binding mobile communication. A mobile node registers itself with several foreign agents using a new registration type. One of the foreign agents is selected to forward the data packets of a data message to the mobile node. A selection algorithm which may be based on randomness, dynamic learning, message traffic congestion, or statistical information collected at the mobile node is utilized.

Claims 17, 20, 23, and 27 are dependent upon claims 15, 19, 21, and 25, respectively. Claim 17 recites, in part, "wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber." Claim 20 recites, in part, "wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber." Claim 23 recites, in part, "wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber." Claim 27 recites, in part, "wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber."

Applicants respectfully submit that each of claims 17, 20, 23, and 27 recite subject matter which is neither disclosed nor suggested by the combination of 3GPP and Bergenwall. As such, Applicants respectfully request that the rejection of claims 17, 20, 23, and 27 be withdrawn and these claims allowed.

For all of the above noted reasons, it is strongly contended that certain clear differences exist between the present invention as claimed in claims 1-28 and the prior art relied upon by the Examiner. It is further contended that these differences are more than sufficient that the present invention would not have been obvious to a person having ordinary skill in the art at the time the invention was made.

This final rejection being in error, therefore, it is respectfully requested that this honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in

this case and indicate the allowability of claims 1-28.

In the event that this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees which may be due with respect to this paper may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

SQUIRE, SANDERS & DEMPSEY LLP

Majid S. AlBassam
Attorney for Applicant(s)
Registration No. 54,749

Atty. Docket No.: 59864.00534

8000 Towers Crescent Drive, 14th Floor
Tysons Corner, VA 22182-2700
Tel: (703) 720-7800
Fax (703) 720-7802

MSA:mmi

Encls: Appendix 1
Appendix 2

APPENDIX 1

CLAIMS ON APPEAL

1. (Previously Presented) A method of recovering location information of a subscriber in a mobile network, the method comprising:

forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber;

forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's TA and an address of the S-CSCF; and

storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network.

2. (Original) The method of claim 1, wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in the HSS.

3. (Original) The method of claim 1, wherein storing data in the HSS comprises storing data in a non-volatile memory in the HSS.

4. (Original) The method of claim 3, wherein storing data in a non-volatile

memory in the HSS comprises storing data in a hard disk drive.

5. (Previously Presented) A method of recovering location information of a subscriber in a mobile network, the method comprising:

forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA); which is a current Care of Address of the subscriber;

forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's TA; and

storing data regarding the location update including the subscriber's TA in the S-CSCF so as to be protected against loss of the location information of the subscriber in the mobile network.

6. (Original) The method of claim 5, wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in a non-volatile memory in the S-CSCF.

7. (Original) The method of claim 6, wherein storing data in a non-volatile memory in the S-CSCF comprises storing data in a hard disk drive.

8. (Previously Presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network, the

method comprising:

forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber;

forwarding a location update of the subscriber in the mobile network from the S-CSCF to an Home Subscription Server (HSS) including the subscriber's TA and an address of the S-CSCF; and

storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network.

9. (Original) The program storage device of claim 8, wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in the HSS.

10. (Original) The program storage device of claim 8, wherein storing data in the HSS comprises storing data in a non-volatile memory in the HSS.

11. (Original) The program storage device of claim 10, wherein storing data in a non-volatile memory in the HSS comprises storing data in a hard disk drive.

12. (Previously Presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a

method of recovering location information of a subscriber in a mobile network, the method comprising:

forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current Care of Address of the subscriber;

forwarding a location update of the subscriber in the mobile network from the S-CSCF to a Home Subscription Server (HSS) including the subscriber's TA; and

storing data regarding the location update including the subscriber's TA in the S-CSCF so as to be protected against loss of the location information of the subscriber in the mobile network.

13. (Original) The program storage device of claim 10, wherein, upon the S-CSCF losing data, lost data including the subscriber's TA may be restored to the S-CSCF from the data stored in a non-volatile memory in the S-CSCF.

14. (Original) The program storage device of claim 13, wherein storing data in a non-volatile memory in the S-CSCF comprises storing data in a hard disk drive.

15. (Previously Presented) A method of recovering location information of a subscriber in a mobile network, the method comprising:

upon a Serving-Call State Control Function (S-CSCF) receiving a call setup request for the subscriber from an Interrogating-Call State Control Function (I-CSCF), the

S-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address from the UMS;

forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber;

forwarding the call setup request from the home agent to the subscriber; and

forwarding an address update from the subscriber to the S-CSCF.

16. (Previously Presented) The method of claim 15, wherein forwarding the request to the UMS comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber.

17. (Previously Presented) The method of claim 15, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

18. (Previously Presented) The method of claim 16, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

19. (Previously Presented) A method of recovering location information of a subscriber in a mobile network, the method comprising:

upon an Interrogating-Call State Control Function (I-CSCF) receiving a call setup

request for the subscriber, the I-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS;

forwarding the call setup request from the I-CSCF to a home agent at the home address of the subscriber;

forwarding the call setup request from the home agent to the subscriber; and

forwarding an address update from the subscriber to the I-CSCF.

20. (Previously Presented) The method of claim 19, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

21. (Previously Presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network, the method comprising:

upon a Serving-Call State Control Function (S-CSCF) receiving a call setup request for the subscriber from a Interrogating-Call State Control Function (I-CSCF), the S-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS;

forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber;

forwarding the call setup request from the home agent to the subscriber; and

forwarding an address update from the subscriber to the S-CSCF.

22. (Previously Presented) The program storage device of claim 21, wherein forwarding the request to the UMS comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber.

23. (Previously Presented) The program storage device of claim 21, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

24. (Previously Presented) The program storage device of claim 22, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

25. (Previously Presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network, the method comprising:

upon an Interrogating-Call State Control Function (I-CSCF) receiving a call setup request for the subscriber, the I-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS;

forwarding the call setup request from the I-CSCF to a home agent at the home address of the subscriber;

forwarding the call setup request from the home agent to the subscriber; and

forwarding an address update from the subscriber to the I-CSCF.

26. (Previously Presented) The program storage device of claim 25, wherein forwarding the request to the UMS comprises forwarding an indication to the UMS that the S-CSCF fails to have a Care Of Address of the subscriber.

27. (Previously Presented) The program storage device of claim 25, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

28. (Previously Presented) The program storage device of claim 26, wherein forwarding the call setup request from the home agent to the subscriber comprises forwarding the call setup request to a Care Of Address of the subscriber.

APPENDIX 2

DRAWINGS OF APPLICATION SERIAL NO. 09/802,861

FIG. 1

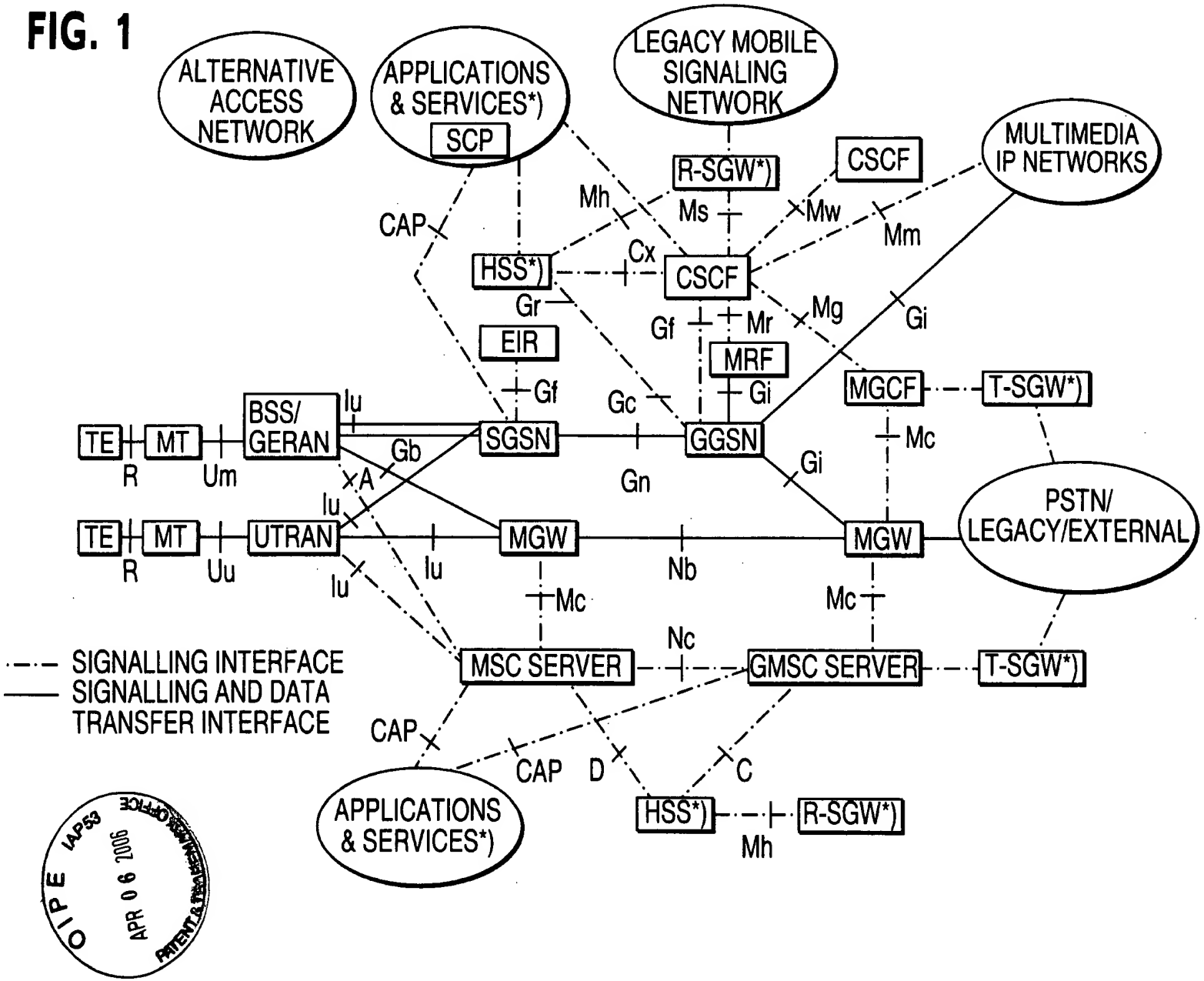


FIG. 2

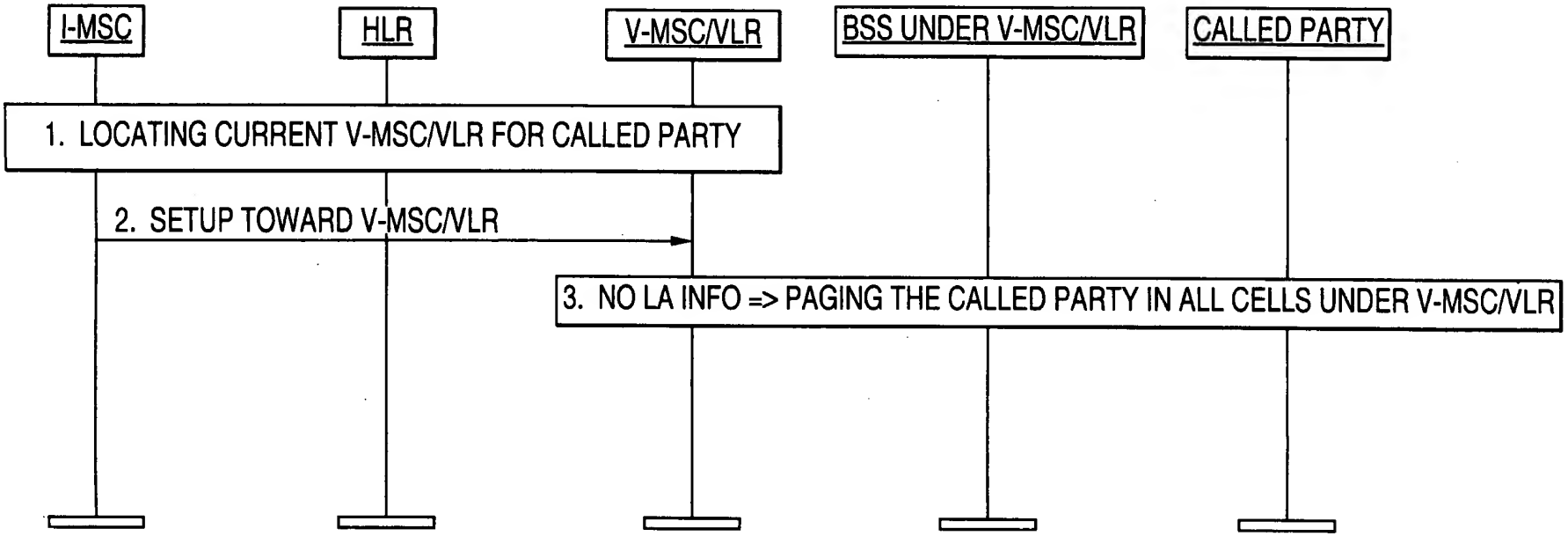

I-MSC
HLR
V-MSC/VLR
BSS UNDER V-MSC/VLR
CALLED PARTY
1. LOCATING CURRENT V-MSC/VLR FOR CALLED PARTY
2. SETUP TOWARD V-MSC/VLR
3. NO LA INFO => PAGING THE CALLED PARTY IN ALL CELLS UNDER V-MSC/VLR

FIG. 3

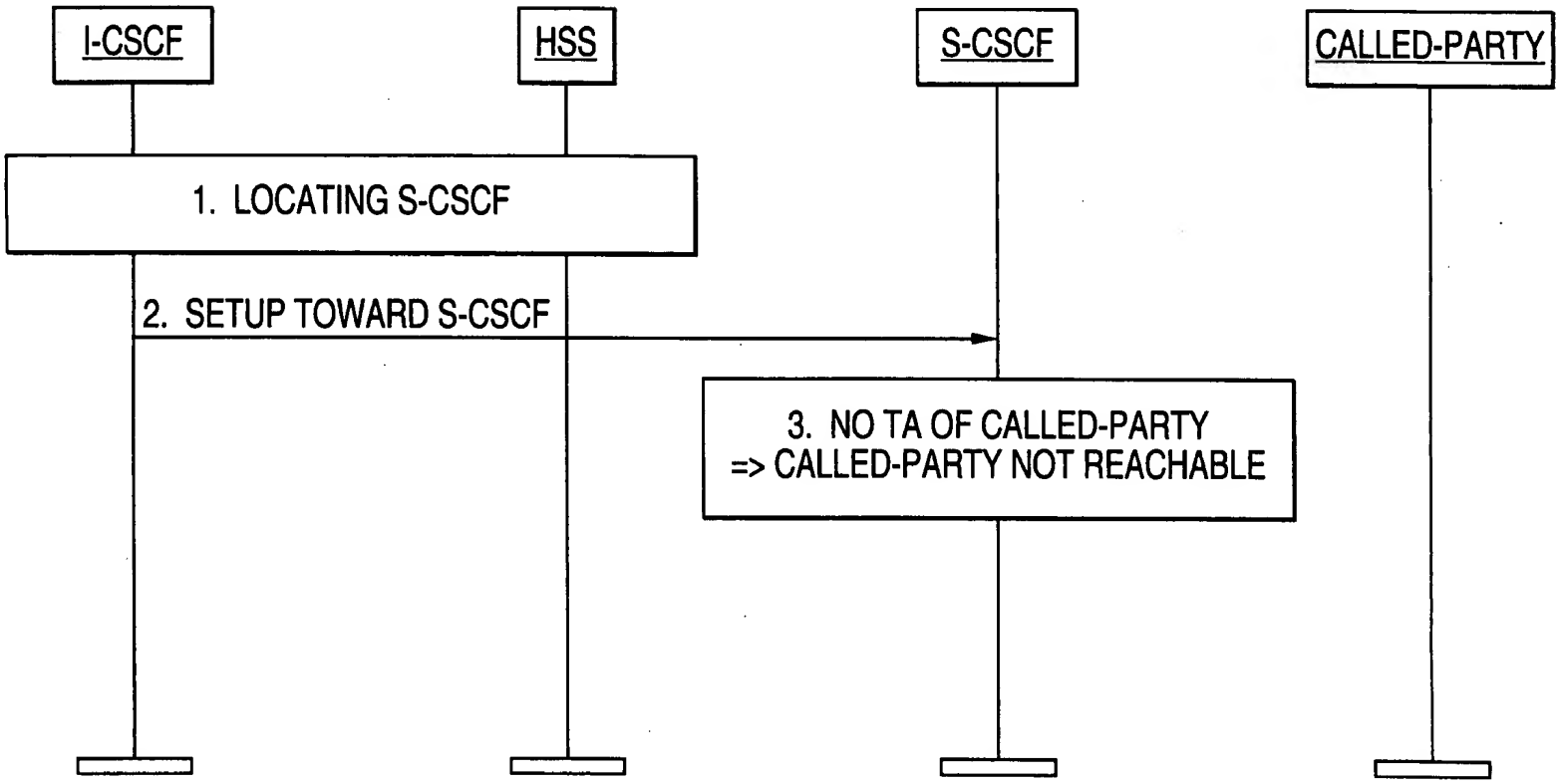

I-CSCF
HSS
S-CSCF
CALLED-PARTY
1. LOCATING S-CSCF
2. SETUP TOWARD S-CSCF
3. NO TA OF CALLED-PARTY
=> CALLED-PARTY NOT REACHABLE

FIG. 4A

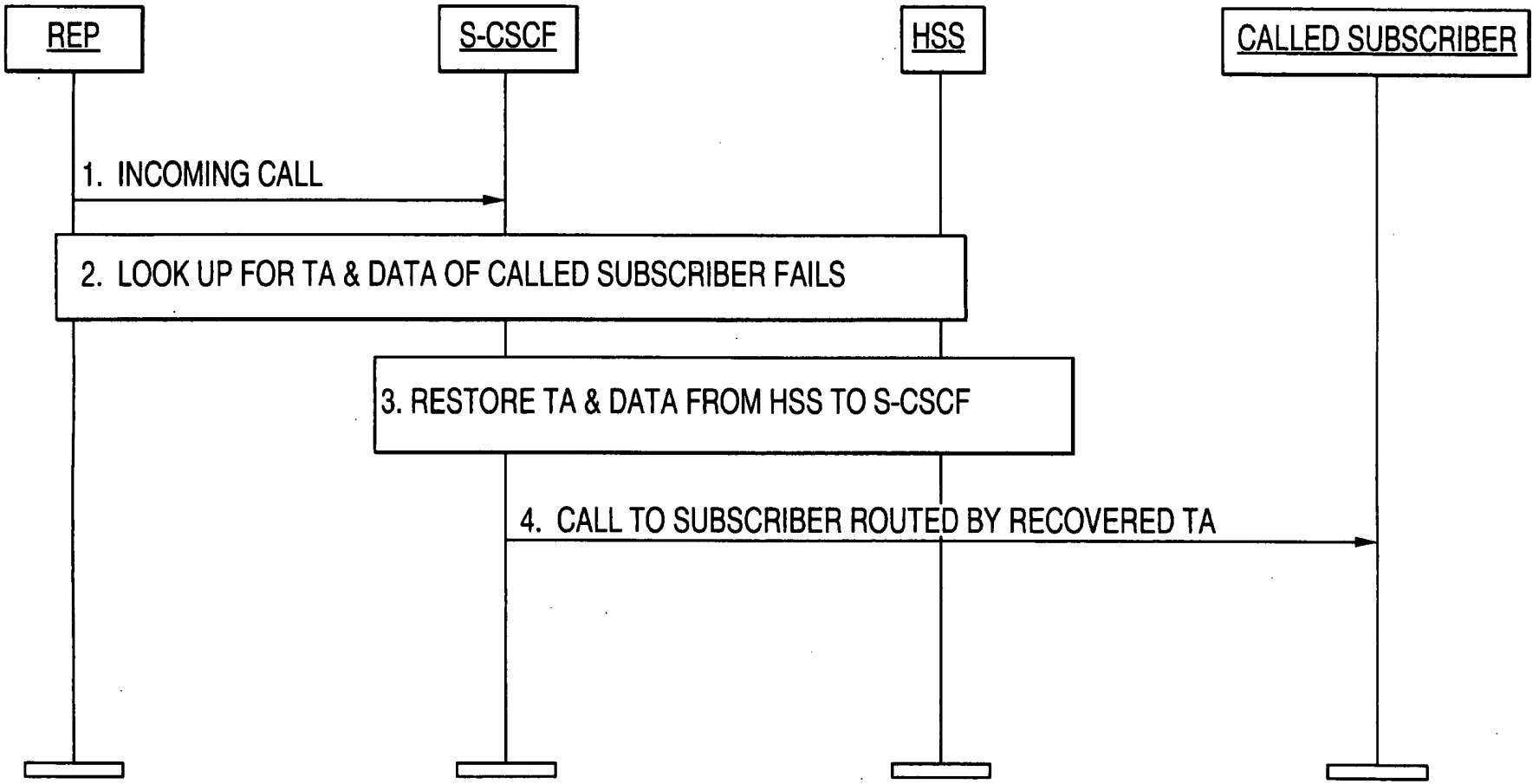

REP
S-CSCF
HSS
CALLED SUBSCRIBER
1. INCOMING CALL
2. LOOK UP FOR TA & DATA OF CALLED SUBSCRIBER FAILS
3. RESTORE TA & DATA FROM HSS TO S-CSCF
4. CALL TO SUBSCRIBER ROUTED BY RECOVERED TA

FIG. 4B

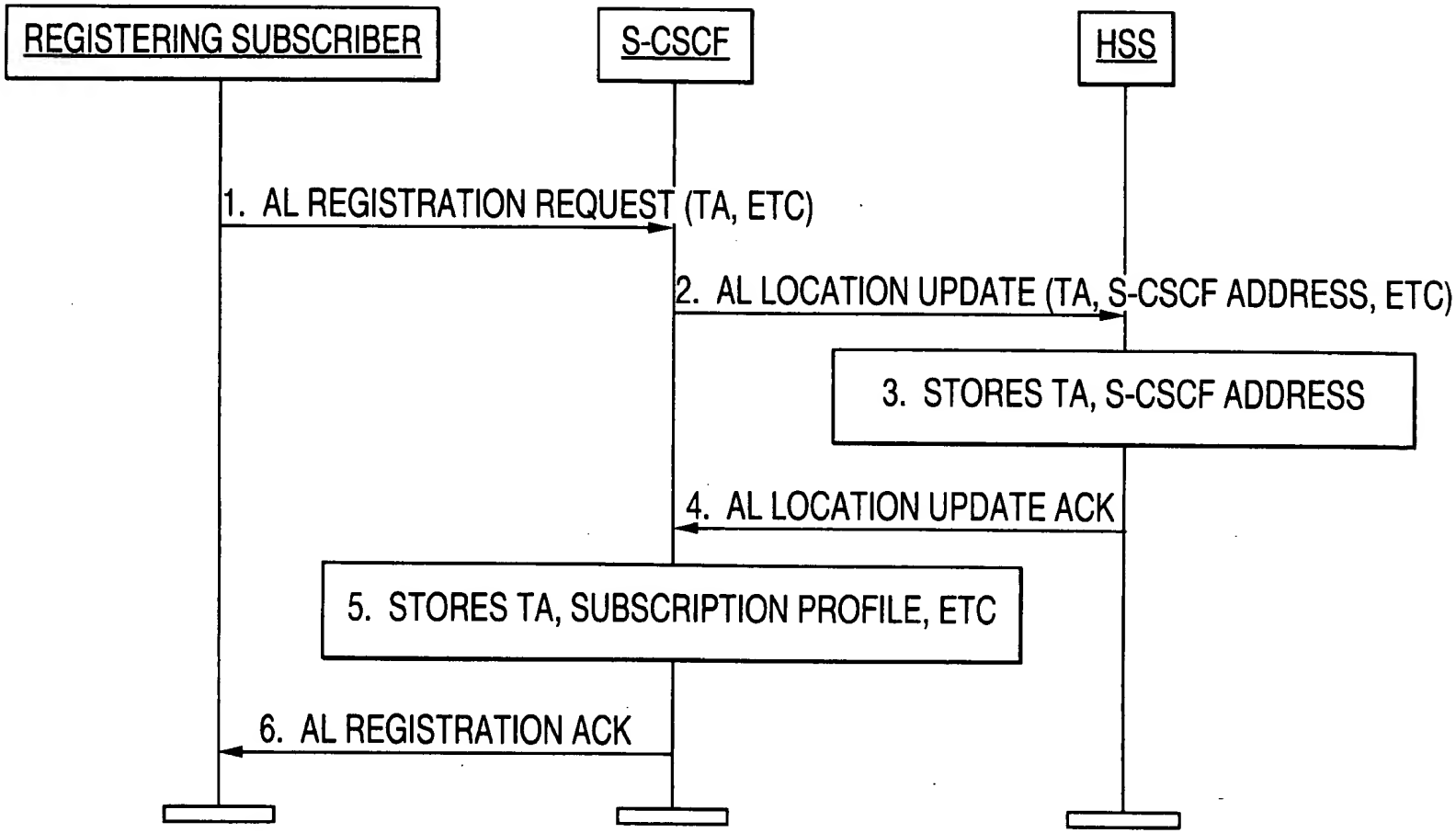
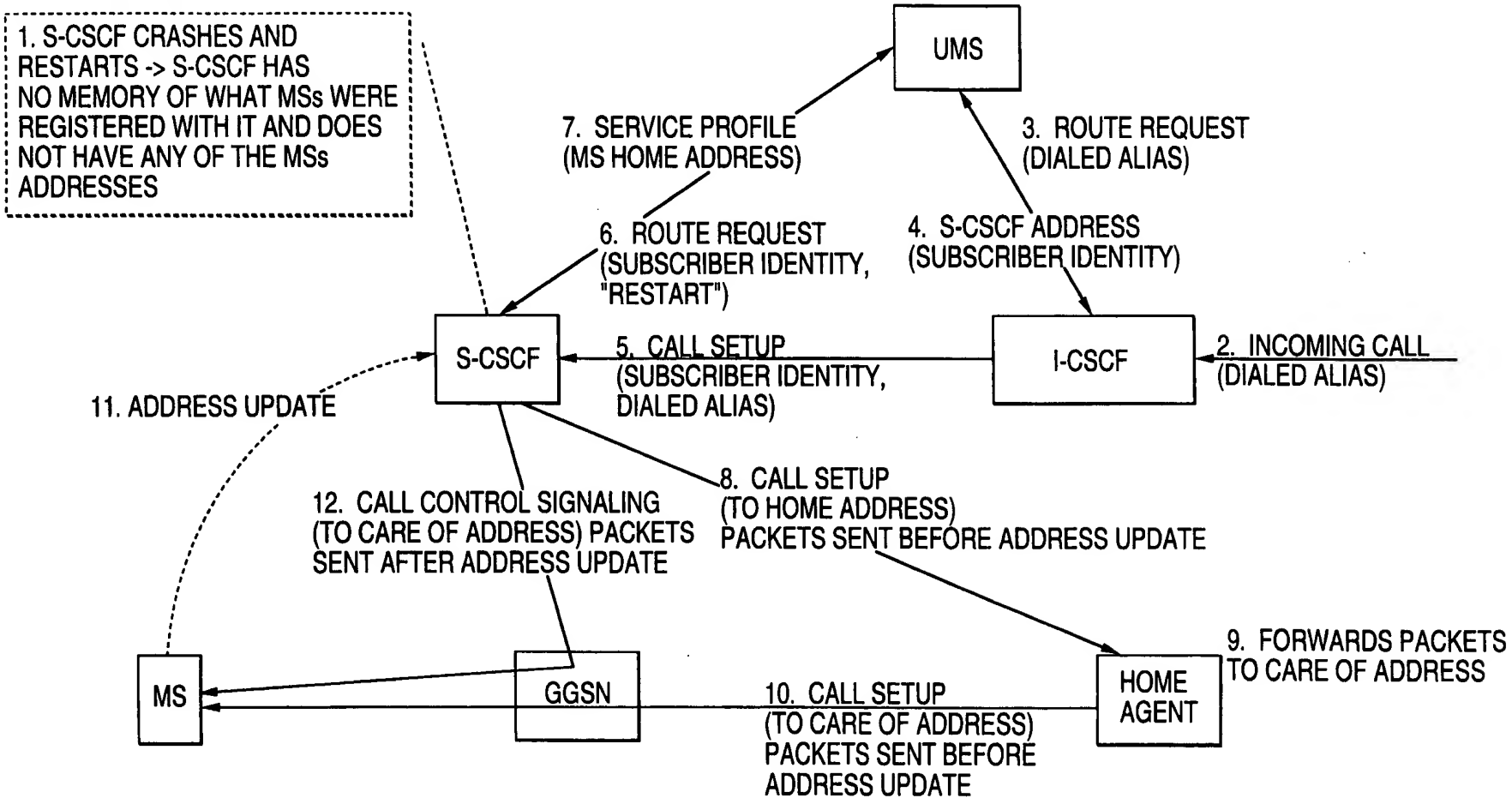

REGISTERING SUBSCRIBER
S-CSCF
HSS
1. AL REGISTRATION REQUEST (TA, ETC)
2. AL LOCATION UPDATE (TA, S-CSCF ADDRESS, ETC)
3. STORES TA, S-CSCF ADDRESS
4. AL LOCATION UPDATE ACK
5. STORES TA, SUBSCRIPTION PROFILE, ETC
6. AL REGISTRATION ACK

FIG. 5


1. S-CSCF CRASHES AND RESTARTS -> S-CSCF HAS NO MEMORY OF WHAT MSs WERE REGISTERED WITH IT AND DOES NOT HAVE ANY OF THE MSs ADDRESSES
UMS
7. SERVICE PROFILE (MS HOME ADDRESS)
3. ROUTE REQUEST (DIALED ALIAS)
6. ROUTE REQUEST (SUBSCRIBER IDENTITY, "RESTART")
4. S-CSCF ADDRESS (SUBSCRIBER IDENTITY)
S-CSCF
5. CALL SETUP (SUBSCRIBER IDENTITY, DIALED ALIAS)
I-CSCF
2. INCOMING CALL (DIALED ALIAS)
11. ADDRESS UPDATE
12. CALL CONTROL SIGNALING (TO CARE OF ADDRESS) PACKETS SENT AFTER ADDRESS UPDATE
8. CALL SETUP (TO HOME ADDRESS) PACKETS SENT BEFORE ADDRESS UPDATE
9. FORWARDS PACKETS TO CARE OF ADDRESS
MS
GGSN
10. CALL SETUP (TO CARE OF ADDRESS) PACKETS SENT BEFORE ADDRESS UPDATE
HOME AGENT